CLAIMS

What is claimed is:

1. An endovascular graft coated with a bioactive agent in a manner sufficient to promote initial thrombus formation.

2. A graft according to claim 1 wherein the graft comprises an expandable portion and a stent cover portion, the stent cover portion being coated with the bioactive agent.

3. A graft according to claim 2 wherein the stent cover portion is prepared from a porous material selected from PET and ePTFE and the bioactive agent comprises collagen.

4. A graft according to claim 2 wherein the bioactive agent is covalently attached in the form of a thin, conformal coating on at least the outer surface of the stent cover.

5. A graft according to claim 4 wherein the agent is attached by the activation of photoreactive groups provided by the cover material, by the bioactive agent, and/or by a linking agent.

6. A graft according to claim 1 wherein the agent is selected from the group consisting of proteins having a specific hemostatic effect, and positively charged compounds having a nonspecific hemostatic effect.

7. A graft according to claim 6 wherein the agent comprises a protein selected from the group consisting of collagen, thrombin, fibrinogen, elastin and von Willebrand factor, including active portions and domains thereof.

8. A graft according to claim 6 wherein the agent is (a) a positively charged polymeric molecule selected from the group consisting of chitosan, polylysine, poly(ethylenimine) and acrylic polymers incorporating positively-charged groups in the form of primary, secondary, or tertiary amines or quaternary salts, or (b) a positively charged non-

polymeric molecule selected from the group consisting of alkyldimethylbenzylammonium chloride and tridodecylmethylammonium chloride.

9. A graft according to claim 2 wherein the agent is attached to the cover in a manner that provides a) a minimal increase in overall bulk, sufficient to permit the graft to be deployed in a minimally invasive fashion, and b) a combination of coating density, coating tenacity and bioactivity sufficient to permit the coating to substantially prevent endoleaking when deployed and used *in vivo*.

10. An endovascular graft comprising an expandable stent portion and a porous stent cover portion selected from PET and ePTFE, the cover portion being coated with a bioactive agent comprising collagen, wherein the collagen is covalently attached in a thin, conformal coating to the material in a manner sufficient to promote initial thrombus formation followed by long term fibrous tissue ingrowth, and wherein the coating is covalently attached by the activation of photoreactive groups provided by the cover material, by the bioactive agent, and/or by a linking agent.

11. A method of preparing an endovascular graft comprising the steps of coating an endovascular graft with a bioactive agent in a manner sufficient to promote initial thrombus formation.

12. A method according to claim 11 wherein the graft comprises an expandable stent portion and a stent cover portion, and the method comprises the step of coating the stent cover portion with the bioactive agent.

13. A method according to claim 12 wherein the stent cover portion is prepared from a porous material selected from PET and ePTFE and the bioactive agent comprises collagen.

14. A method according to claim 12 wherein the bioactive agent is covalently attached in the form of a thin, conformal coating on at least the outer surface of the stent cover.

15. A method according to claim 14 wherein the agent is attached by the activation of photoreactive groups provided by the cover material, by the bioactive agent, and/or by a linking agent.

16. A method according to claim 11 wherein the agent is selected from the group consisting of proteins having a specific hemostatic effect, and positively charged compounds having a nonspecific hemostatic effect.

17. A method according to claim 16 wherein the agent comprises a protein selected from the group consisting of collagen, thrombin, fibrinogen, elastin, and von Willebrand factor, including active portions and domains thereof.

18. A method according to claim 16 wherein the agent is (a) a positively charged polymeric molecule selected from the group consisting of chitosan, polylysine, poly(ethylenimine) and acrylic polymers incorporating positively-charged groups in the form of primary, secondary, or tertiary amines or quaternary salts, or (b) a positively charged non-polymeric molecule selected from the group consisting of alkyldimethylbenzylammonium chloride and tridodecylmethylammonium chloride.

19. A method according to claim 12 wherein the agent is attached to the cover in a manner that provides a) a minimal increase in overall bulk, sufficient to permit the graft to be deployed in a minimally invasive fashion, and b) a combination of coating density, coating tenacity and bioactivity sufficient to permit the coating to substantially prevent endoleaking when deployed and used *in vivo*.

20. An endovascular graft prepared by the method of claim 11.

21. A method of preventing endoleaking in the course of deploying and using an endovascular graft that comprises an expandable stent portion and a stent cover, the method comprising the step of first coating the stent cover in the manner of claim 12.